State of Wisconsin

CORRESPONDENCE/MEMORANDUM

DATE: September 8, 2000 FILE REF: 4519-22b

TO: Natural Resources Board

FROM: George E. Meyer

SUBJECT: Recommendation to Adopt Rules for Wisconsin's Plan to Attain the 1-Hour Ozone Standard and to Find the NOx and VOC Control Measures in AM-27-00 as Necessary to Meet Rate-of-Progress Emission Reduction Requirements for 2000-2007

1. INTRODUCTION

This plan and supporting rules focus on providing a demonstration of attainment of the national ambient air quality standard for 1-hour concentrations of ozone in eastern Wisconsin by 2007. The rules contained in this package are necessary for Wisconsin to achieve federally mandated rate-of-progress (ROP) objectives to reduce emissions of volatile organic compounds (VOC) and nitrogen oxides (NOx) for the years 2000 through 2007.

This attainment plan is designed to assure that NOx and VOC emissions from sources in Wisconsin, in conjunction with anticipated VOC and NOx emissions from sources in upwind states, do not cause violations of the 1-hour ozone standard. The plan assumes that the regional NOx SIP Call issued by USEPA, which addresses interstate ozone transport, is upheld by the U.S. Supreme Court. This plan is not designed to achieve future federal requirements related to 8-hour ozone concentration, fine particulate matter, hazardous air pollutants or regional haze, even though actions taken to implement this attainment plan may reduce these problems.

The modeling of this plan's VOC and NOx emission reductions support a finding of projected attainment by 2007 for the 1-hour ozone standard based on EPA's current attainment demonstration guidance. This demonstration assumes emission reductions from the NOx SIP call, where it is required, along with implementation of the federal Tier 2 tailpipe standards and low sulfur fuel requirements.

In addition to a modeled demonstration of attainment, this plan addresses other Clean Air Act (CAA) requirements including ROP emission reductions, Reasonably Available Control Technology (RACT) for VOC and excess emission fees. The language of the ROP provisions in the CAA explicitly require that Wisconsin achieve emission reductions averaging 3 percent per year until the attainment date of 2007. The CAA also specifically requires VOC RACT for all identified major source categories and the excess VOC emissions fee beginning in 2008 in order for EPA to approve the attainment plan.

Under this plan, the core attainment strategy now depends on major regional NOx reductions, combined with the prior, VOC-focused controls in order to achieve attainment by 2007. Wisconsin is selectively adjusting the "NOx Wavier" that EPA granted under Section 182 of the CAA to remove the waiver for NOx pass/fail cutpoints as part of the enhanced vehicle inspection and maintenance (I/M) program. Wisconsin is claiming credit for selective NOx control measures toward both the attainment demonstration and as a component of the rate-of-progress plan.

Except for the I/M component, the measures in this rule package are distinct from those covered by the NOx waiver – specifically, NOx New Source Review Control Technology [LAER], NOx New Source Review Offsets and existing major source NOx RACT. The agency anticipates that EPA will approve the continuation of such a modified NOx emission control waiver, under 182(f). The CAA implies that Wisconsin can selectively pursue NOx control as necessary for attainment while continuing the remainder of the NOx waiver as long as the waived controls are excess reductions to those shown necessary for a timely attainment demonstration.

2. OVERVIEW OF THE OZONE ATTAINMENT PLAN

The Attainment Demonstration Plan, as supported by rules proposed for adoption under AM-27-00, includes elements that:

- Demonstrate improved air quality sufficient to attain the 1-hour ozone standard by 2007;
- Achieve the federally mandated rate-of-progress (ROP) deadlines for reducing VOC and NOx emissions in the milestone years of 2002, 2005 and 2007;
- Establish VOC and NOx emission budgets for mobile, area and stationary sources in 2002, 2005 and 2007;
- Set an ozone season NOx emission rate for 5 specific electric generation facilities for 2002, 2003, 2004, 2005, 2006 and 2007;
- Establish enforceable rate-of-progress control measures to meet the contingency requirement by setting the 2003, 2006 and 2007 emission rates for the 5 electric generation facilities;
- Establish Reasonably Available Control Technology (RACT) requirements for VOC emissions from industrial cleaning (e.g. - clean-up) operations in southeastern Wisconsin;
- Revise NR 410 to establish a federally mandated excess emissions fee of $5000/ton of VOC for major source emissions in southeastern Wisconsin if this area remains in nonattainment for ozone in 2008.

*A summary matrix of the NOx control portions of the plan is shown in **Table 1** on page 10.*

Current ozone formation ("photochemical") modeling for the Lake Michigan region indicates Wisconsin areas can demonstrate attainment by 2007 under the assumptions of this final attainment plan revision.

3. SUMMARY OF MAJOR CHANGES TO THE DRAFT RULES

In response to comments on the draft plan, the Department has revised the control plan to meet the rate-of-progress requirement. The following two paragraphs highlight the major deletions and modifications to the proposed NOx and VOC emission control plan components. The Response to Public Comments summary document **(Attachment 1)** contains more detailed discussions of the comments and changes made to the draft plan.

Elements in the Draft Rule Package deleted in the Final Plan
Some components of the draft attainment package have been entirely removed from the final rule package. The final plan:

- does not include any formal emission control requirements outside an 8-county region that represents the defined ozone areas still violating the 1-hour ozone standard
- does not include offsets for new or modified NOx emission sources
- does not include the annual burner tune-up component proposed for both new and existing sources covered by the rule.

The agency intends to pursue a voluntary burner tune-up effort to achieve NOx reductions in a broader area that has been shown to impact ozone levels. Separate initiatives are being started in that regard.

Elements Significantly Modified from the Draft Rule Package
The package proposed for adoption incorporates several refinements to the rate-of-progress control components that remain consistent with the rule structure developed in the draft. Some of the refinements include:

- raising the threshold for facilities subject to new source NOx standards to a level consistent with the major modification thresholds
- adjusting emission limits and minimum size or minimum utilization (e.g.- capacity factor) thresholds for specific NOx source performance standard categories
- establishing source sub-categories, more focused emission limits and refined content limits based on a broadened set of control options for facilities subject to industrial cleaning operations VOC RACT
- setting the applicability period to the ozone season for the existing facility NOx emission limits
- excluding existing electric utility facilities which are subject to the ozone season system-average emission rates from other unit-specific emission limits and combustion optimization requirements
- delaying the effect of the required additional 3% ROP control contingency for one year through the establishment of annually-declining emission rate averages (for the ozone season) for the large electric utility systems

- removing Kewaunee County from the ROP control region because it is not violating the standard, has been redesignated to attainment and does not contribute significant levels of NOx to either Door County or the other Wisconsin ozone nonattainment areas

- establishing a non-regulatory effort to pursue voluntary NOx reductions from sources no longer covered by the rule package.

4. RATE-OF-PROGRESS (ROP)

This plan includes controls on sources in Wisconsin needed to meet the rate-of-progress based emission budgets for NOx and VOC under the 1-hour ozone standard. **Table 2** shows the maximum VOC and NOx emissions or "budgets" allowable in the milestone years of 2002, 2005 and 2007 in order to meet federal rate-of-progress emission reduction requirements.

Table 2 - Rate-of-Progress Milestones for 2002 through 2007

% Reduction Relative to "1990 Adjusted Baseline"	2002 ("33%")		2005 ("42%")		2007 ("51%")	
	VOC 330 tpd	NOx 356 tpd	VOC 329 tpd	NOx 354 tpd	VOC 328 tpd	NOx 353 tpd
8-County Budget	230 tpd	346 tpd	221 tpd	321 tpd	214 tpd	295 tpd
Creditable Reduction	30.3%	2.7%	32.8%	9.2%	34.8%	16.2%

Because the requirements of EPA's NOx SIP Call issued in 1998 do not now apply to NOx sources in Wisconsin, Wisconsin has to craft a unique control program to address ROP needs. EPA's current guidance allows other states, that remain a part of the NOx SIP Call, to claim their statewide NOx reductions based on the NOx SIP plans toward ROP.

Background on ROP Requirements to Support Attainment

Several stakeholders had questioned the need for Wisconsin to satisfy federal ROP requirements for the 2002-2007 period in light of Wisconsin's ability to demonstrate through modeling that the state should attain the 1-hour ozone standard in 2007 assuming upwind states fully comply with the NOx SIP call. A review of the applicable Clean Air Act provisions for ozone control plans indicates that ROP requirements must be implemented for each ozone nonattainment area through 2007.

The Rate-of-progress [or "reasonable further progress", as referred to in the Clean Air Act at 42 USC 7511a (c)(2)(B)] is one of several specific requirements for ozone control plans. Other similar requirements include the Enhanced Inspection/Maintenance (I/M) program for motor vehicles [required by 42 USC 7511a (c)(3)], Reasonably Available Control Technology emission limits for major sources, e.g., 25 tons of VOCs in severe ozone nonattainment areas [required by 42 USC 7511a

(b)(2)], and gasoline vapor recovery programs, i.e., VOC emission controls on gasoline dispensing equipment, [required by 42 USC 7511a (b)(3)]. These specific emission control measures have previously been incorporated into Wisconsin's ozone control plan (SIP), as required by the Clean Air Act.

The language of the ROP provision of the Act clearly indicates that the reductions must be made at a rate "equal to [at least 3 percent of baseline emissions each year] averaged over each consecutive 3-year period…***until the attainment date***". The ROP requirement, like analogous language for other similar requirements for ozone control plans, mandates that these emission control measures apply in a nonattainment area in order for the state's ozone control plan to be approved as demonstrating attainment of the ozone standard.

Even though modeling results indicate that southeastern Wisconsin should attain the 1-hour ozone standard in 2007, assuming the compliance of upwind states with the NOx SIP call, without the benefit of ROP reductions, the language of the ROP provisions in the Clean Air Act requires that Wisconsin achieve emission reductions averaging 3 percent per year until the attainment date of 2007.

Two letters received from EPA since the release of the draft plan reiterate the necessity of submitting a formal rate-of-progress plan covering the period through the year that attainment can be demonstrated **(Attachment 2).**

A Focused Rate-of-Progress Plan

Options for achieving the 2002, 2005 and 2007 ROP milestones were considered through the public hearing and public comment process. The combined NOx and VOC control program selected for adoption in this rule package focuses on a subset of control strategies in the draft plan:

1. Initiating a modest, but balanced, NOx control requirement focused on 48 sources at 21 facilities in the eight counties starting at the end of 2002

2. Gradually phasing in more stringent control objectives for the largest coal electric facilities through the 2007 ozone season

3. Implementing NOx cutpoints as part of the tailpipe test in the vehicle I/M program

4. Establishing new source NOx emission performance limits for several categories of combustion sources

5. Filling identified gaps in the VOC RACT program for major sources.

The final plan contains a longer window (8 to 12 months) to accomplish the required NOx controls to meet the 2002 ROP budgets, based on EPA guidance covering when ROP controls have to actually be in place. The magnitude of the NOx (and VOC) reductions needed in 2003 required the inclusion of multiple measures and multiple sources in the total emission control effort. Such a broad and balanced effort was based as much on the short timeframe for implementing controls as on the final NOx control level needed.

The plan includes the I/M cutpoint component partly because NOx test equipment is already in place and NOx tests (but not the test pass/fail decision) are already built into the program. The final plan excludes the proposed burner tune-up requirements, a simplification that results in a modest emission reduction loss, but which precludes the need to include an additional 160 units with low net emission levels in this NOx control program.

The required ROP contingency remains built into the core ROP program. However, guidance allows the contingency portion of the control effort to be effective one ozone season after each milestone year. Hence, for the electric generating units covered by the annually declining NOx emission rate structure, the 2002 contingency target is met by having a lowered rate set for 2003. In the overall control plan, this has the effect of slightly increasing the allowable emission budget at each milestone, compared to the draft plan, for each year of concern until 2007. This still provides a "sliding" 3% contingency over the period until 2007.

The proposed plan reflects an achievable and cost-efficient pathway to meeting ROP relying particularly on readily available and fuel-saving combustion improvement techniques for the early milestone years (2002-2003). Pursuit of this option, rather than a higher control level for fewer sources, precludes the need for hasty investment in more costly add-on NOx control technologies. **Attachment 3** summarizes the base emission reduction objectives for the rate-of-progress control plan for 2002-2007.

NOx and VOC Budgets for Transportation Conformity based on an ROP Plan for Attainment
The Clean Air Act (CAA) requires a showing that regional transportation plans, and Transportation Improvement Programs, conform to the emissions budgets for the mobile sector for the milestone years of 2002, 2005 and 2007. These emissions budgets are required to be included in this plan. The conformity assessment follows a coordinated, consultative process involving the Departments of Transportation and Natural Resources, the regional planning entities for areas with air quality problems, EPA and the Federal Highway Administration.

Conformity budgets must address both VOC and NOx emissions for all ozone nonattainment areas designated under the CAA. These budgets need to reflect consistent planning assumptions between the Air Quality and Transportation planning processes and reflect the impact of emission forecasts and emission control programs incorporated into ROP plans and attainment demonstrations. The Mobile Sector Budgets for 2002, 2005 and 2007, incorporated in this plan are shown in **Table 3**.

Table 3 reflects emission levels used in the attainment demonstration modeling and are based on the aggregate rate-of-progress budget. Extensive dialogue with stakeholders earlier in the process refined the mobile sector projections. The refinements reflect existing and proposed mobile sector emission control components and updated VMT projections to use for the milestone years of 2002, 2005 and 2007. The revised budgets and projections in the plan will replace the budgets and projections that are in the Phase 2 Attainment Demonstration once these are approved as part of this final (Phase 3) Attainment Demonstration.

Table 3 – Mobile Sector ROP Budgets for the 1-Hour Attainment Demonstration

Counties with Ozone Attainment or Maintenance Conformity Budgets[1]	2002	2005	2007

	VOC (TPD)	NOx (TPD)	VOC (TPD)	NOx (TPD)	VOC (TPD)	NOx (TPD)
Milwaukee, Racine, Kenosha, Waukesha, Washington, & Ozaukee	**43.5**	**103.5**	**36.7**	**84.1**	**32.2**	**71.4**
Sheboygan	**4.5**	**9.4**	**3.7**	**7.4**	**3.3**	**6.4**
Manitowoc	**5.4**	**10.0**	**5.2**	**8.8**	**5.2**	**8.3**
TOTAL	**53.4**	**122.9**	**45.6**	**100.3**	**40.7**	**86.1**

[1]Assumes high VMT growth, 7.5% buffer, updated speed profiles, and EPA's latest Tier2/low sulfur gasoline projections.

5. A NOx-BASED CONTROL PROGRAM TO SUPPORT ATTAINMENT

Background on the Need to Pursue a NOx Control Strategy to Address Ozone

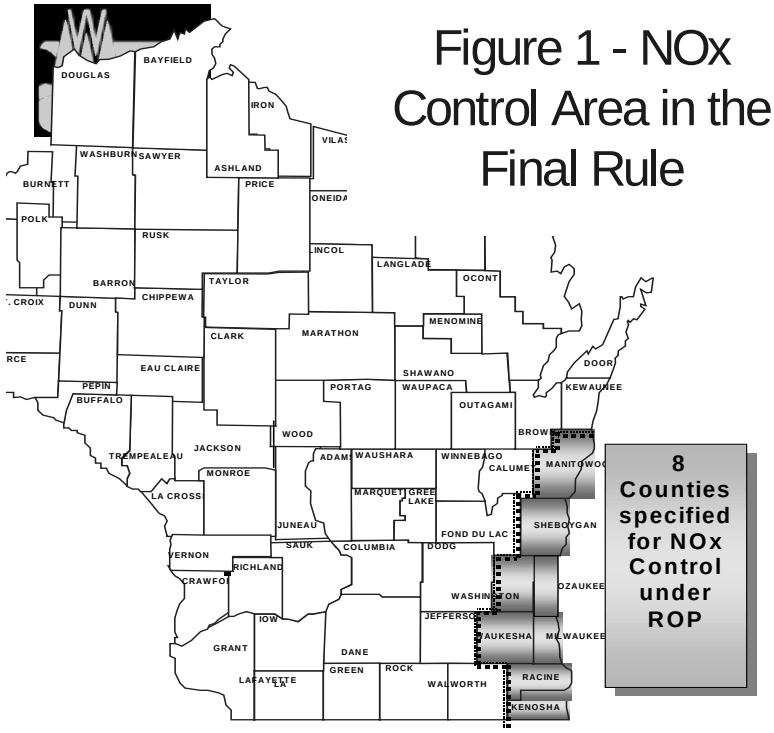
In the early 1990's Lake Michigan area attainment evaluations focused more on local and smaller region attainment issues. Those assessments focused on an ozone control strategy built predominantly around urban area VOC controls. These assessments led EPA to approve the Lake Michigan states' mid-1990's request for a "NOx waiver" for some of the CAA-specified NOx controls for their ozone nonattainment areas. This conditionally exempted the areas from NOx controls beyond those achieved through other parts of the Clean Air Act such as new vehicle emission control standards and national acid rain controls.

The ozone attainment demonstration modeling evaluations that supported the regional Ozone Transport Assessment [OTAG] effort and an updated Lake Michigan attainment strategy showed that this region's ozone problem would positively respond to a strong regional NOx control effort in conjunction with the more localized area VOC control strategy. Significant effort since 1995 has focused on the necessary scope of a regional NOx control effort to reach attainment.

EPA guidance allows states to craft final ("Phase 3") attainment demonstrations based on some increment of NOx control without automatically triggering those measures previously waived. Areas can retain their core waiver from prescribed NOx controls while pursuing other timely and enforceable NOx control measures. Where appropriate from an air quality assessment perspective, such NOx reductions can also be counted toward the VOC-based ROP plans as long as a proportionate NOx reduction occurs compared to the claimed VOC ROP credit. This allows Wisconsin to craft an efficient NOx and VOC control plan to meet attainment and ROP without automatically tripping NOx control measures specified in the CAA.

Geographic Scope of Additional NOx (and VOC) Control

Because the most recent technical evaluations indicate a need to focus the control effort on NOx sources as well as VOC sources, NOx control measures are established for eight of the counties in southeast Wisconsin originally designated in 1990 as "severe" or "moderate" for ozone nonattainment under the Clean Air Act. The eight counties contain NOx and VOC sources shown to directly impact ozone concentrations in these and downwind areas of Wisconsin violating the 1-hour standard. The reductions from the entire area are creditable under current EPA guidance to rate-of-progress requirements for the period through 2007 or until attainment is demonstrated. The 8 counties include



Kenosha, Manitowoc, Milwaukee, Ozaukee, Racine, Sheboygan, Washington, and Waukesha. This refined "control region" is shown in **Figure 1 – NOx Control Area in the Final Rule.**

The Department took a draft package to public hearing that requested comment on the creation of a Secondary Ozone Control Region and an Ozone Maintenance Region. In addition that draft included Kewaunee County as part of the principal control area. **Figure 1a** is the "Figure 1" map from the draft plan showing the counties in the Primary and Secondary Ozone Control Regions and the Ozone Maintenance Region.

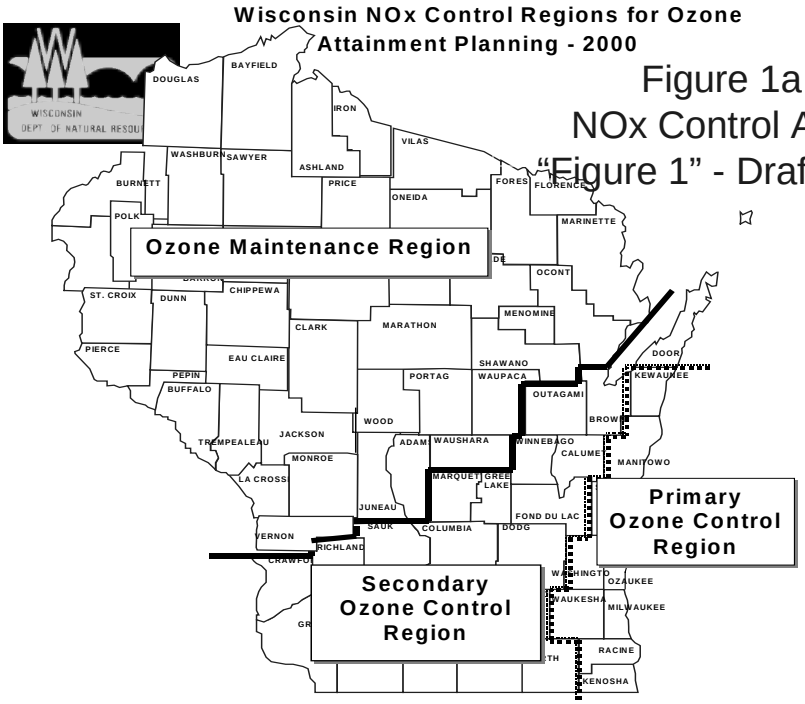


Figure 1a
NOx Control Area
"Figure 1" - Draft Plan

The geographic extent of the emission controls in the draft generated a great deal of discussion with stakeholders. The narrowed scope of the rate-of-progress control program proposed for adoption reflects the Department's resolution of the issues raised on that earlier draft proposal.

Controlling NOx from Stationary Sources

There remain two principal components in the NOx control program for stationary sources proposed for adoption: combustion optimization and NOx emission performance standards for existing sources and NOx emission performance standards for new sources. These NOx controls are designed to meet the ROP milestones and to prevent any growth in emissions from stationary sources of NOx emissions from exceeding those sector-based ROP budgets. The performance standards for existing sources become effective at the end of 2002 and impact emission levels by the start of the ozone season in 2003. The standards for new or modified sources become enforceable after the effective date of the rule and affect emission levels throughout their operation.

Table 1 on page 10 provides information on key aspects of the NOx Control Plan to meet the ROP requirements for 2002 - 2007. **Table 1** provides a comparison of the NOx reduction effort required at stationary sources including large electrical generating units (EGU's).

The utility boiler emission limits set corporate, system-average, NOx emission rates on an ozone season basis for 17 of the 18 largest electric generation units located at five facilities operated by the WEPCO and Alliant electric utility systems. These average rate limits decline over the period 2002 through 2007. The rates become effective December 31 of each year and effectively limit NOx emissions the following ozone season. The WEPCO coal-fired facilities include Valley, Pleasant Prairie, Oak Creek, Port Washington and a part of Edgewater, Unit 5. The Alliant facility is the remainder of the Edgewater power plant including units 1-4.

Final NOx Controls - Summary of SIP

NOx Emission Controls to Achieve Rate-of-Progress for the 1-Hour Ozone Standard Attainment Demonstration

Ozone Control Regions in SIP	Offsets for Major NOx Sources	Minimum Performance Standards for New Facilities	Minimum Performance Standards for Existing Facilities	Large Electric Generation Facilities (EGUs)
8 SE WI Counties	**No Offset Requirement**	**2001**	**Dec 31, 2002** Includes Large Unit NOx Emission Limits and Combustion Optimization	**Dec 31 of Specified Year:** **2002 - 0.33 lbs/mmbtu** **2003 – 0.31 "** **2004 – 0.30 "** **2005 – 0.29 "** **2006 – 0.29 "** **2007 – 0.28 "** **EGU System Average Rate** *(30 day rolling avg)* Assumes I/M in 7 counties *(excluding Manitowoc)* & Performance Standards in 8
Remainder of State	**No ROP Requirement - Voluntary Combustion Optimization, Tune-up and NOx Performance Commitments by Large Sources**			

TABLE 1 OVERVIEW OF THE RATE-OF-PROGRESS NOx CONTROL PLAN

The plan also establishes minimum performance standards for other NOx sources above specified threshold levels. These standards are based on unit-specific emission limits for the ozone season and on combustion optimization requirements. Based on historic data, these standards are projected to effect 31 units at 16 additional facilities in the 8 county area. The proposed NOx limits and performance standards are based on fuel type, combustion unit type, and size.

The NOx emission performance standards incorporate NOx emission reduction trading as an alternate compliance tool for sources if the sources use adequate NOx emission monitoring and tracking systems.

The plan sets performance standards for NOx emissions for new facilities and major modifications above certain threshold sizes based on their potential to emit NOx. In a "typical" year, the agency anticipates that up to 15 new or modified units could be affected by these standards in the 8 county area. Larger "new" units will remain subject to the current PSD-BACT control requirements for major NOx sources as defined under the CAA.

Attachment 4 contains more detailed information on the emission controls being proposed for various source categories in the eight counties including details on the NOx emissions performance standards for stationary sources.

Controlling NOx from Motor Vehicles through I/M Cutpoints for NOx

While the current motor vehicle inspection program tests for VOC and NOx emissions, at this time the I/M NOx cutpoints are not enforceable limits. Implementing NOx cutpoints has been the subject of

extensive stakeholder dialogue since 1998 when this option was evaluated for inclusion in the plan required by EPA's NOx SIP Call.

Repairs needed to meet NOx cutpoints have been found to be highly cost-effective in relation to other potential NOx and VOC controls for the mobile sector. NOx cutpoints will result in a reduction of approximately 13 ½ tons per day of NOx. This is approximately 31% of the 43.4 ton per day reduction of NOx required between 1999 and 2002. Creditable NOx reductions based on the NOx cutpoints will decline to approximately 7 tons per day in 2007 due to the introduction of vehicles with lower tailpipe emissions and due to the testing of newer vehicles through on-board diagnostic systems. If NOx cutpoints were not used to meet ROP requirements, an equivalent level of reduction would be required of other sources. Evaluations during the comment period supported the fact that the NOx credit achieved from pursuing the I/M NOx cutpoint strategy for 2002 would be difficult and expensive to replace.

6. VOC CONTROLS (RACT) FOR INDUSTRIAL CLEANING OPERATIONS

The Clean Air Act requires that states establish Reasonably Available emission Control Technology (RACT) for major sources of VOC emissions that are located in certain nonattainment areas. RACT is defined as the lowest emission rate required of a source considering technological and economic feasibility. Three categories of sources of VOC emissions that were not included in previous ozone attainment plans must now be controlled to RACT levels. They are industrial cleaning operations, ink manufacturing and plastic parts coating.

Revisions to Chapter NR 423 establish RACT requirements for VOC emissions generated at industrial cleaning operations located in a nine county area that includes Kewaunee. *(While the NOx program can address only 8 counties, the VOC RACT area defined in the 1996 ROP Plan includes Kewaunee Co. This rule is an overdue component of that 1996 Plan.)* The rule relies upon emission restrictions, operational practices, control systems and record keeping requirements. In this case, emissions restrictions are essentially equivalent to VOC content or volatility limitations for industrial cleanup solvents. These limitations encourage material substitutions toward industrial cleanup solvents or solvent solutions with lower VOC content or, in some cases, lower vapor pressure. Compliance with this RACT requirement is estimated to reduce VOC emissions in the nonattainment counties in the range of 0.1 tons per day to 0.6 tons per day.

Several different industrial sectors pursue cleaning or clean-up operations that could be affected by the rule. These include fabricated metal products, except machinery and transportation equipment; chemicals and allied products; printing, publishing and allied industries; industrial and commercial machinery and computer equipment; and furniture and fixtures. A stakeholder review effort has been pursued to elicit technical advice and comment on the proposed rule. The final rule is not anticipated to result in a major level of effort in regard to compliance costs or record keeping.

The Department is pursuing an administrative consent order to achieve the RACT requirements for VOC emissions at ink manufacturing operations. An analysis of ink manufacturers in the nonattainment area identified one source qualifying for RACT restrictions. That company owns and operates equipment used to mix, transfer and store ink and ink ingredients containing VOC. RACT for

Ink Manufacturing requires lids on all equipment used for mixing ink and ink ingredients. This order will be finalized before the Ozone Attainment Demonstration is submitted to EPA in December, 2000.

A completely separate rule development effort is addressing plastic parts coating operations. We anticipate proposing a draft rule prior to the attainment SIP submittal. VOC reduction from this rule is projected at less than 0.1 tons per day. An expedited rule development process is being pursued to establish RACT for this category so the requirements can be effective by the 2002 ozone season.

7. EXCESS VOC EMISSIONS FEE

The attainment plan includes revisions to s. NR 410.06, Wis. Adm. Code, to satisfy a provision of the Clean Air Act that requires major VOC sources, under certain conditions, to pay an excess emissions fee of $5000/ton of VOC. The fee would apply to the portion of their emissions beyond 80% of an annual 2007 baseline level as defined in the rule. The fee applies to sources with more than 25 tons of VOC emissions per year located in the six severe nonattainment counties of Kenosha, Milwaukee, Ozaukee, Racine, Washington and Waukesha. The fee activates if the area remains in nonattainment for ozone in 2008 and thereafter. The fee is incorporated into the emissions inventory fee structure and would not apply in 2008 if the area receives a formal one-year extension to reach attainment.

8. BACKGROUND – OZONE STATE IMPLEMENTATION PLAN (SIP) REVISIONS

Ongoing Attainment SIP Requirement

By December 31, 2000, Wisconsin is required to submit to EPA revisions to its State Implementation Plan (SIP) that will result in the attainment of the one-hour ozone standard throughout Wisconsin. These plan revisions, and their associated rules and programs, represent the third phase of a series of attainment demonstrations developed to address the one-hour ozone problem in eastern Wisconsin. These air quality improvement strategies combine federal, regional and local emission controls sufficient to demonstrate attainment of the one-hour ozone standard by 2007. The ROP Plan is a core component of the Ozone Attainment SIP for Wisconsin's nonattainment areas.

Area Status for Ozone and the Tie-in of the ROP Plan to Prior Ozone SIP Elements

At the present time, the following counties are designated as severe nonattainment areas for the one-hour ozone standard: Kenosha, Milwaukee, Ozaukee, Racine, Washington and Waukesha. Manitowoc, Sheboygan and Kewaunee Counties were originally designated moderate areas. Walworth County was designated marginal, and Door County was designated as a marginal, rural transport area.

Kewaunee, Walworth, and Sheboygan Counties were reclassified as attainment based on air quality improvement that occurred during the mid-90's, without the benefit of a formal regional ozone attainment demonstration. For Door County, EPA revoked the 1-hour standard based on 1995 to 1997 air quality data after the 8-hour standard was promulgated. This was based on a presumption that the 8-hour standard and NOx SIP Call would be driving regional ozone plans and would ensure regional attainment by 2007. EPA has recently reinstated Door County as a "marginal - rural transport" nonattainment area. Door County currently is not recording violations of the standard and a request for

redesignation to attainment will be pursued based on the approval of a SIP that contains a current demonstration of attainment for 2007.

Sheboygan County was recently reinstated as an ozone maintenance area for the one hour standard. Sheboygan County currently is recording violations of the standard and emissions from the county are shown to impact Manitowoc County and Door County during some ozone episodes. EPA guidance provides a method for establishing the creditability of NOx (and/or VOC) reductions from a 1990 baseline for emissions from Manitowoc and Sheboygan Counties. Based on the showing of downwind in-state ozone impact, the agency has included NOx and VOC reductions from Sheboygan County in the attainment demonstration and rate-of-progress plans.

Including Sheboygan County's emission reduction contributions in Wisconsin's ROP calculations somewhat reduces the control percentage across the entire control region but achieves a larger aggregate reduction in NOx (and VOC) from the air shed. If Sheboygan County had been deleted from the ROP plan, it's continuing ozone violation status could have led to a requirement to implement its potential attainment contingency measures, as identified in its current maintenance plan, in isolation. One of these measures includes reformulated gasoline.

Kewaunee County is classified as attainment with the 1-hour standard and is not recording violations of the standard. The agency has determined that Kewaunee County should be removed from the NOx portion of the ROP-based attainment plan because it does not have major sources of NOx contributing to the Door County nonattainment problem. In addition, the absence of concentrated mobile sector activity suggests that it does not have a major effect on downwind air quality. VOC RACT components in the rule do apply to the county because of the 1996 ROP VOC control area definitions.

The plan as proposed for adoption provides a basis on which to update (in a separate SIP effort) the maintenance plans for the two counties of Sheboygan and Kewaunee. These would then be based on final approval of the regional attainment demonstration.

9. POTENTIAL AFFECTED PARTIES AND STAKEHOLDER INPUT

As part of the ozone planning process during the last several years, all significant NOx and VOC emission sectors, including mobile, stationary, and area sources in Wisconsin have been the subject of emission control evaluations for the period 2001 through 2007. Recent evaluations have focused predominantly on stationary source NOx control because of EPA's NOx SIP call to multiple states in the eastern US and in the midwest. Department staff received extensive stakeholder input on the form and levels of the NOx emission limits, the applicability of limits to various sectors and on the appropriate geographic extent of controls needed to address the ozone problem. That input has continued through and beyond the formal public hearing and public comment timeframe.

Stakeholder groups that have been involved in the development of the NOx control elements in the plan include electric utilities, the Wisconsin Paper Council, Wisconsin Manufacturers and Commerce and the Department of Administration, the Department of Transportation, the Public Service Commission, the Department of Commerce, other state and local agencies, individual manufacturers, and other individuals. Outreach for development of RACT rules for VOC emissions have more

recently included a more focused stakeholder effort for eastern Wisconsin. If added VOC control, beyond the current RACT efforts, become necessary in response to a conditional approval or disapproval of the attainment SIP associated with these rules, the agency will reinitiate a formal stakeholder dialogue.

By virtue of the smaller number of industrial sources now affected by the NOx performance standards, each of the facilities identified as potentially affected has been directly contacted by agency staff. The agency has had extensive interactions on the NOx control components with the two private electric generation utilities and one municipal electric utility directly impacted by the rules for existing facilities. A broader group of facilities has also made comment on portions of the rules that would affect new sources and major source modifications.

Finally, the agency has had multiple contacts and has received comment from the various governmental representatives for Sheboygan and Manitowoc Counties. Their concerns addressed similar issues noted previously by local governmental entities in the 6 southeast counties. Issues of concern include: potential competitive disadvantage for the attraction of new industry, potential restrictions to their transportation planning efforts, small business impact of an offset program that contains small source size thresholds, and the general uncertainty of being "considered" nonattainment. Communication with these entities helped refine issues associated with the appropriate control approach for the Manitowoc Public Utility combustion units and underscored the importance for regional ozone of pursuing a reasonable control effort for the very high NOx emission Edgewater power plant.

10. PRIOR INVOLVEMENT OF THE NATURAL RESOURCES BOARD

The Board has previously adopted several sets of administrative rules to address the requirements of the Clean Air Act related to ozone attainment. The ROP plans for 1996 and 1999 focused on VOC emissions control and the vehicle emissions testing program.

The Department worked with stakeholders in 1999 to respond to EPA's NOx SIP Call. In April, 1999 the Board authorized hearings on proposed rules needed to implement the NOx SIP Call that focused on electric utility and large industrial sources of NOx in 22 states in the eastern U.S. That regulatory effort was placed on hold pending the outcome of federal litigation.

This plan represents an effort to assure continued reduction in ozone levels to meet the standard by establishing limitations on NOx emissions and in the process, as required by the CAA, ensure that ROP milestones are met. As a required component of the Wisconsin's Ozone Attainment SIP, this final plan represents a significant refinement from the draft ozone attainment and ROP plan approved by the Board for public hearing in May.

Though not a major strategy component of the plan, projected reductions in VOC emissions resulting from new RACT elements should also prove beneficial to ozone reduction. The VOC reductions slightly reduce the NOx ROP-based reduction hurdle for the 8 counties for the 2002-2007 period.

11. SUMMARY OF COMMENTS ON THE DRAFT PLAN

The agency received a significant level of comment on the draft rule package by virtue of its "menu-of-options" approach to crafting a rate-of-progress control strategy. Many of the approximately 75 comments received regarding AM-27-00 questioned the core need to pursue any further emission control program to address attainment of the 1-hour standard given EPA's pursuit of the NOx SIP call outside of Wisconsin and, regardless of Wisconsin's rate-of-progress efforts, the attainment demonstration modeling shows a "statistical" achievement of the standard by 2007.

(As noted earlier in the memorandum, the state is under a strict CAA obligation to craft and implement a rate-of-progress effort through the attainment date or until such time as attainment is achieved.)

General comments surrounding the scope of the draft plan concerned a perception that the agency was overstepping its authority in pursuing maintenance efforts associated with attainment rather than just crafting a rate-of-progress plan through 2007. These also concerned the attempt of the draft plan to establish a NOx control effort for areas attaining the air quality standard and for areas outside the formal ozone SIP planning domain for rate-of-progress and for attainment.

Significant comments regarding some of the optional control components of the ROP plan included:

- concerns with specific emission limits for new or used equipment
- the breadth of sources that would be subject to regulation under the rule
- concern regarding the viability of a NOx credit market in the short term that would be needed to support a NOx offset requirement for new and modified NOx sources
- concern regarding the threshold size of sources that could be subject to the various NOx performance standard and offset requirements.

Associated issues included:

- potential small business impact
- general business development impact for areas subject to new source standards
- the potential creation of major business planning uncertainties regarding the availability of NOx credits inside and outside the formal nonattainment areas.

As a result of interactions with EPA and extensive interactions with utility, industrial and transportation sector stakeholders, the agency has crafted the single "option" to address rate-of-progress embodied in this rule. It responds to many of the negative comments and still achieves the necessary rate-of-progress in a fashion consistent with the regional attainment demonstration. The proposal provides a cost-effective solution to the NOx control effort needed to meet the 2002 rate-of-progress milestone.

A separate **Response to Public Comments (Attachment 1)** provides a detailed response to comments on an issue-by-issue basis and is more inclusive in terms of issues addressed.

12. FISCAL IMPACT OF THE ROP PLAN

The rule proposed for adoption will affect state government in terms of the costs incurred by the Department of Administration (DOA) in reducing NO_x emissions from one boiler used for heating and cooling at University of Wisconsin facilities. This facility at UW-Milwaukee may be able to reduce NO_x emissions by an estimated 25-30 percent through the implementation of the proposed combustion optimization standard. These actions are estimated to yield a savings over time based on fuel efficiency and operational improvements. However, up-front monitoring and evaluation costs may lead to direct expenditures approaching $1000 per year amortized over the expected 10 year remaining life of the equipment.

The rule will also affect local government because Manitowoc Public Utilities owns and operates three units affected by the combustion optimization and one unit affected by the emission limit performance standards. The potential total annual cost of compliance for the Manitowoc utility could range from a maximum estimated net annual savings of $50,000, based on the expected fuel and operational cost reductions, to a maximum direct net NOx-based control cost (exclusive of those projected savings) approaching $5,000 per year.

Fiscal Estimate – NOx Controls at Government-Owned Facilities

Government Source	Number of Affected Units	NOx Reduction – *Proposed Performance Standard* (Tons per Day)	Total Annual Cost ($)	$/ton Reduction
Manitowoc Public Utility	4 Boilers	0.84	(-50,000) to 4,700	(-500) to 40
Department of Administration	1 Boiler	0.1	(-6,000) to 1000	(-2,000) to 350

In terms of program management costs, the Department of Natural Resources is responsible for implementing this plan after it is adopted. Staff in the Bureau of Air Management will be able to oversee the implementation of the new plan as part of their ongoing responsibilities to achieve the 1-hour ozone standard.

12. ENVIRONMENTAL REVIEW FOR POTENTIAL IMPACT

An environmental analysis of the impact of the proposed rule revisions is not needed because these changes are considered to be a Type III action under s. NR 150.03(3), Wis. Adm. Code. A Type III action is one that normally does not have the potential to cause significant environmental effects, normally does not significantly affect energy usage and normally does not involve unresolved conflicts in the use of available resources.

Several comments on the draft package contended that the plan as drafted constituted a Type II action which would entail a more extensive environmental review. However, as modified for adoption, the agency believes the rules meet the test for a Type III action, not a Type II action. Therefore, beyond the commitment to a mid-course, multi-state review of the adequacy of this plan to achieve attainment

in the region by 2007, sometime in the 2003-2004 time-frame, the agency plans no further environmental review on this rate-of-progress plan.

13. SMALL BUSINESS ANALYSIS

Small businesses will not be directly affected by the proposed rules for controlling VOC and NOx emissions. The regulations for NOx control for existing facilities would apply to industries large enough to have existing steam boilers, industrial process heaters, furnaces, combustion turbines or stationary reciprocating engines with at least 75 million BTU per hour (or equivalent) of heat (energy) input. The RACT regulations for VOC control apply to major sources by definition. The NOx emission limit requirements for new or modified sources do apply to sources at a somewhat lower threshold than for existing facilities. However, the overall control effort for stationary sources is expected to predominantly affect larger businesses.

Some aspects of the rule proposal that might have impacted a broader population of business entities, and possibly some small businesses, have been removed from the ROP plan proposed for adoption. This specifically includes the annual burner tune-up requirement, which deletes approximately 150 units out of approximately 200 total units from a NOx program responsibility. Also deleted from the NOx program is the NOx offset requirement for new and modified facilities. Although it is impossible to estimate how many facilities would or wouldn't have been affected by an offset requirement for new sources, and how many would be pursuing significant rebuilding, modification or expansion to existing facilities, the issue has become moot for this rule.

Some indirect impact, due to slight changes in electricity rates, and a slightly increased I/M test failure rate, may still be experienced by small businesses. However, the cost of control for newly installed or completely refurbished equipment in the proposal is significantly less than the relative retrofit cost for existing units subject to emission limits. Also, any expenditure specifically for low NOx technology (mostly affecting utility facilities) would be subject to the same tax incentives and extended amortization schedules as the concurrent expenditure for the core combustion unit *(without Low-NOx Technology)*. Stationary source NOx reductions based on best combustion management practices *(the optimization standards and the now voluntary tune-up efforts)* are anticipated to result in aggregate cost savings for fuel and equipment maintenance. Most vehicle repairs needed for NOx related problems should reduce other vehicle maintenance costs, often lead to fuel-efficiency improvement and should extend the average repaired-vehicle lifetime.

14. COMPARISON WITH FEDERAL REQUIREMENTS

The proposed revisions to the state NOx emission control program, as set forth in NR 428, 485, etc., are needed to meet provisions in the federal Clean Air Act that require the state to craft and implement a Plan to meet the one-hour ambient air quality standard for ozone. The CAA requires attainment of that standard as expeditiously as practicable, but not later than 2007. The CAA requires that minimum ROP milestones be met in the period before attainment and that contingency measures are implemented in the event these ROP plans do not achieve timely reductions. Therefore, the proposed plan meets and does not exceed federal requirements.

ATTACHMENTS

1 – Response to Public Comments on AM-27-00

2 – Copies of two EPA Letters to DNR regarding the Attainment Demonstration and the ROP Plan

3 - Achieving Rate-of-Progress – A Description of Sector Budgets and Effect of Controls

4 - A Summary of the Stationary Source NOx Control Program to achieve Rate-of-Progress and to Demonstrate Attainment of the 1-Hour Ozone Standard